

Remarks:

The above amendments and these remarks are responsive to the Office action dated February 27, 2004. Claims 1-15, 19, 20 and 22-27 are pending in the application.

In the Office action, claims 1-4, 10 and 14 are rejected under 35 USC §102(b) in view of Choate (US 5,993,009); claims 1-4, 10-12 and 14 are rejected under 35 USC §102(b) in view of Taniguchi (US 5,661,546); claims 15, 24, 26 and 27 are rejected under 35 USC §102(e) in view of Smith (US 6,416,185); claims 1-14 and 23 are rejected under 35 USC §103(a) based on Belliveau (US 6,048,080) in view of Chen (US 6,267,478); and claims 19, 20 and 22 are rejected under 35 USC §103(a) based on Smith (US 6,416,185) in view of Iizuka (US 6,264,333). By way of this amendment, claims 1-4, 14-15 and 25-27 have been amended, claim 24 has been cancelled without prejudice, and new claim 28 has been added.

Applicants initially note, with appreciation, that the Examiner has indicated allowability of claim 25 if rewritten in independent form to include all of the features of the base claims and any intervening claims. Applicants thus have placed claim 25 in independent form. Inasmuch as claim 25 depends directly from independent claim 24, claim 25 has been amended to include the subject matter of claim 24. Claim 24 has been cancelled, without prejudice. Claim 25 thus is understood to be in allowable form.

Claim 1 recites an image projection system including an illumination source and a time-varying focus device. Although applicants contend that the claim 1 is distinguished from the art of record as previously drafted, in view of the Examiner's comments with respect to claim 25, applicants have amended claim 1 to recite a time

varying focus device configured to “periodically alter focal length of sequential image frames to enhance quality of the image on the screen.” As noted by the Examiner the cited references fail to show or suggest altering focal length of sequential image frames. Claim 1 thus is understood to be in allowable form. Claims 2-14 and 23 depend from claim 1, and thus also are understood to be in allowable form for at least the same reasons as claim 1.

As amended, claim 15 recites an image projection system including an illumination source; a spatial light modulator adapted to modulate light into a plurality of discrete light beams, each configured to project a light spot on the screen; and a variable focus device configured to periodically vary size of light spots between a first size in a first image frame and a second size in a second image frame such that a corresponding image portion “rapidly and repeatedly alternates in sequential image frames between a focused state and a defocused state to enhance appearance of the image.” Neither Smith (which the Examiner cites in rejecting claim 15), nor any of the other cited references, disclose a variable focus device configured to effect such rapid and repeated alternating between focused and defocused states in sequential image frames.

At most, Smith may be cited as disclosing adjusting focus in either of two directions. There is no discussion of alternating between focused and defocused states, and no discussion of any adjustment to focus in sequential image frames. For at least the aforementioned reasons, claim 15 thus is believed to be in allowable form. Claims 19, 20 and 22 depend from claim 15, and are believed allowable for at least the same reasons as claim 15.

As amended, claim 27 recites variable focus means for varying size of a light beam such that the image on the screen repeatedly “alternates between a focused and an unfocused state in sequential image frames.” As noted generally above, none of the cited references disclose any form of variable focus means for varying a light beam to alternate an image between focused and unfocused states in sequential image frames. The rejection of claim 27 under 35 USC 102(e) thus should be withdrawn, and the claim indicated to be allowable.

Claim 26 recites a method for enhancing the quality of an image on a screen which includes providing an illumination source configured to generate a light beam; directing the light beam from the illumination source along an optical path to produce image frames on a screen; and “periodically altering the focal lengths of the image frames” to produce repeatedly interleaved focused and defocused image frames by “rapidly and repeatedly focusing and defocusing sequential image frames.” The art of record does not show or suggest a method including such rapid and repeated focus and defocus of sequential image frames. In fact, the Examiner expressly notes in the present Office action that the art of record does neither shows nor suggests a step “wherein periodically altering the focal lengths includes altering the focal length of sequential image frames.” The rejection of claim 26 thus should be withdrawn.

New claim 28 recites a method for enhancing the quality of an image on a screen, the method including providing an illumination source configured to generate a light beam; directing the light beam from the illumination source along an optical path to produce images on a screen, wherein each image has a focal length; and “rapidly and repeatedly altering the focal lengths of the images to produce

interleaved sequentially focused and defocused images on the screen." As noted above, the art of record fails to show or suggest a method which includes "rapidly and repeatedly altering the focal lengths of the images to produce interleaved sequentially focused and defocused images."

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Respectfully submitted,

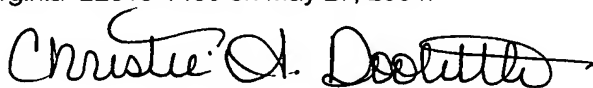
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on May 27, 2004.



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